



US009585458B2

(12) **United States Patent**  
**Teller et al.**

(10) **Patent No.:** **US 9,585,458 B2**  
(45) **Date of Patent:** **Mar. 7, 2017**

(54) **LIP BALM WITH SPHERICAL SURFACE AND METHOD FOR PRODUCING**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/016,257**

(22) Filed: **Feb. 4, 2016**

(65) **Prior Publication Data**  
US 2016/0262522 A1 Sep. 15, 2016

**Related U.S. Application Data**

(63) Continuation of application No. 13/941,204, filed on Jul. 12, 2013, now abandoned, which is a (Continued)

(51) **Int. Cl.**  
*A45D 40/20* (2006.01)  
*A45D 40/00* (2006.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... *A45D 40/0068* (2013.01); *A45D 40/00* (2013.01); *A45D 40/12* (2013.01);  
(Continued)

(58) **Field of Classification Search**  
CPC . A45D 2040/0012; A45D 40/12; A49D 40/16  
(Continued)

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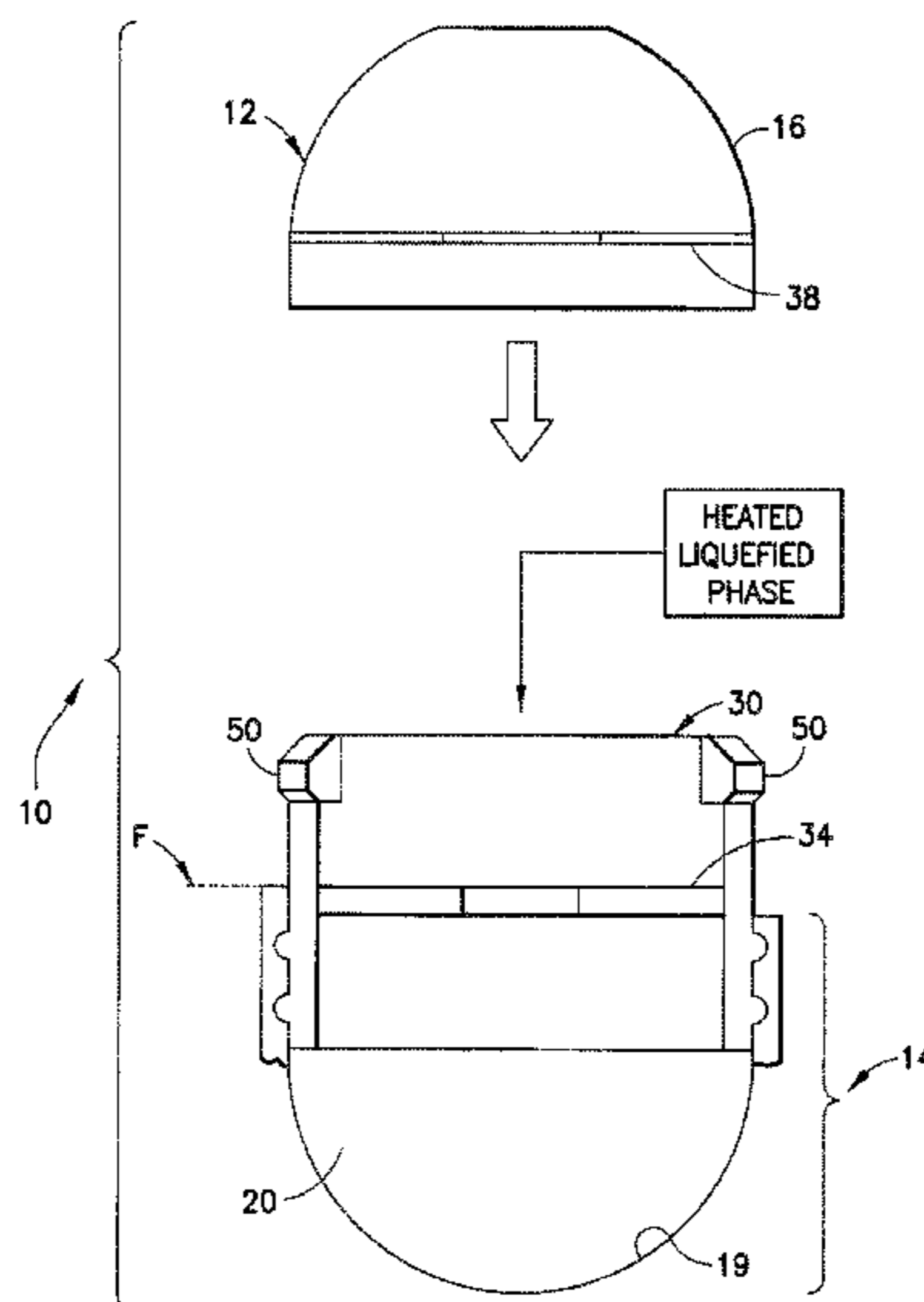
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(57) **ABSTRACT**

A lip balm applicator product comprises upper and lower portions that are connectable together to define the applicator product being of a substantially spherical shape. A support platform is located in the lower portion and accommodates a quantity of lip balm having an arcuate surface. A lip balm comprises a composition of waxes and oils in solid form and formed to have an arcuate surface. The composition is formed to have the arcuate surface using a hot pour process. A method of manufacturing a lip balm comprises providing a receptacle having a concave arcuate surface. A lip balm material in a heated, liquefied phase is poured into the receptacle. Once poured, the heated, liquefied phase is allowed to solidify such that a surface of the solidified lip balm material has an arcuate configuration that corresponds to the concave arcuate surface of the receptacle.

**44 Claims, 4 Drawing Sheets**



**Related U.S. Application Data**

continuation of application No. 13/891,268, filed on May 10, 2013, now abandoned, which is a continuation of application No. 12/632,114, filed on Dec. 7, 2009, now Pat. No. 8,444,337.

(51) **Int. Cl.**

*A45D 40/16* (2006.01)  
*A61K 8/31* (2006.01)  
*A61K 8/92* (2006.01)  
*A61Q 19/00* (2006.01)  
*A45D 40/26* (2006.01)  
*B29C 39/02* (2006.01)  
*B65B 5/10* (2006.01)  
*A45D 40/12* (2006.01)  
*A61K 8/97* (2006.01)

(52) **U.S. Cl.**

CPC ..... *A45D 40/16* (2013.01); *A45D 40/26* (2013.01); *A61K 8/31* (2013.01); *A61K 8/922* (2013.01); *A61K 8/925* (2013.01); *A61K 8/927* (2013.01); *A61K 8/97* (2013.01); *A61Q 19/001* (2013.01); *B29C 39/026* (2013.01); *B65B 5/103* (2013.01); *A45D 2040/0012* (2013.01); *A61K 2800/87* (2013.01)

(58) **Field of Classification Search**

USPC ..... 401/49, 88, 98  
 See application file for complete search history.

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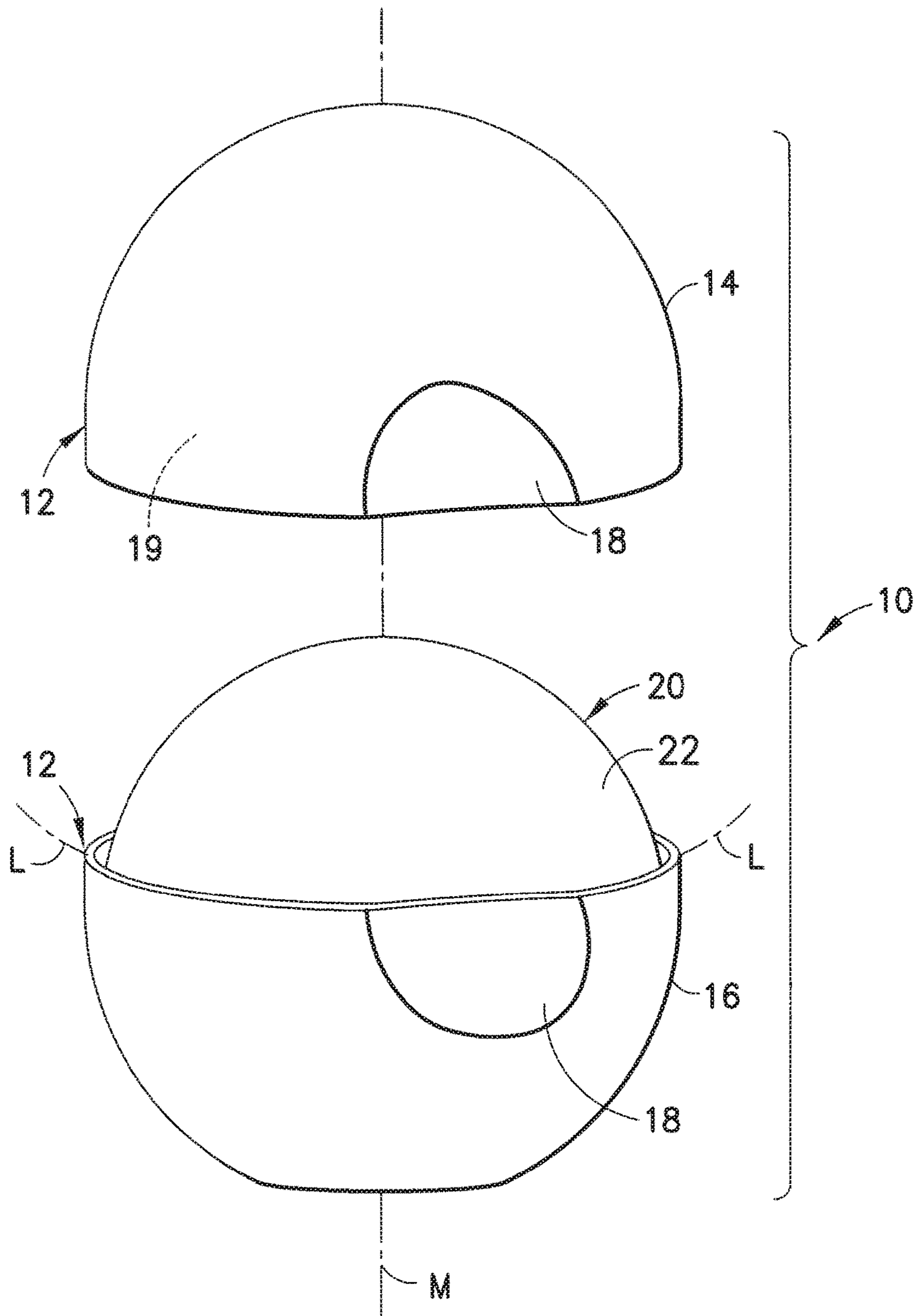


FIG. 1

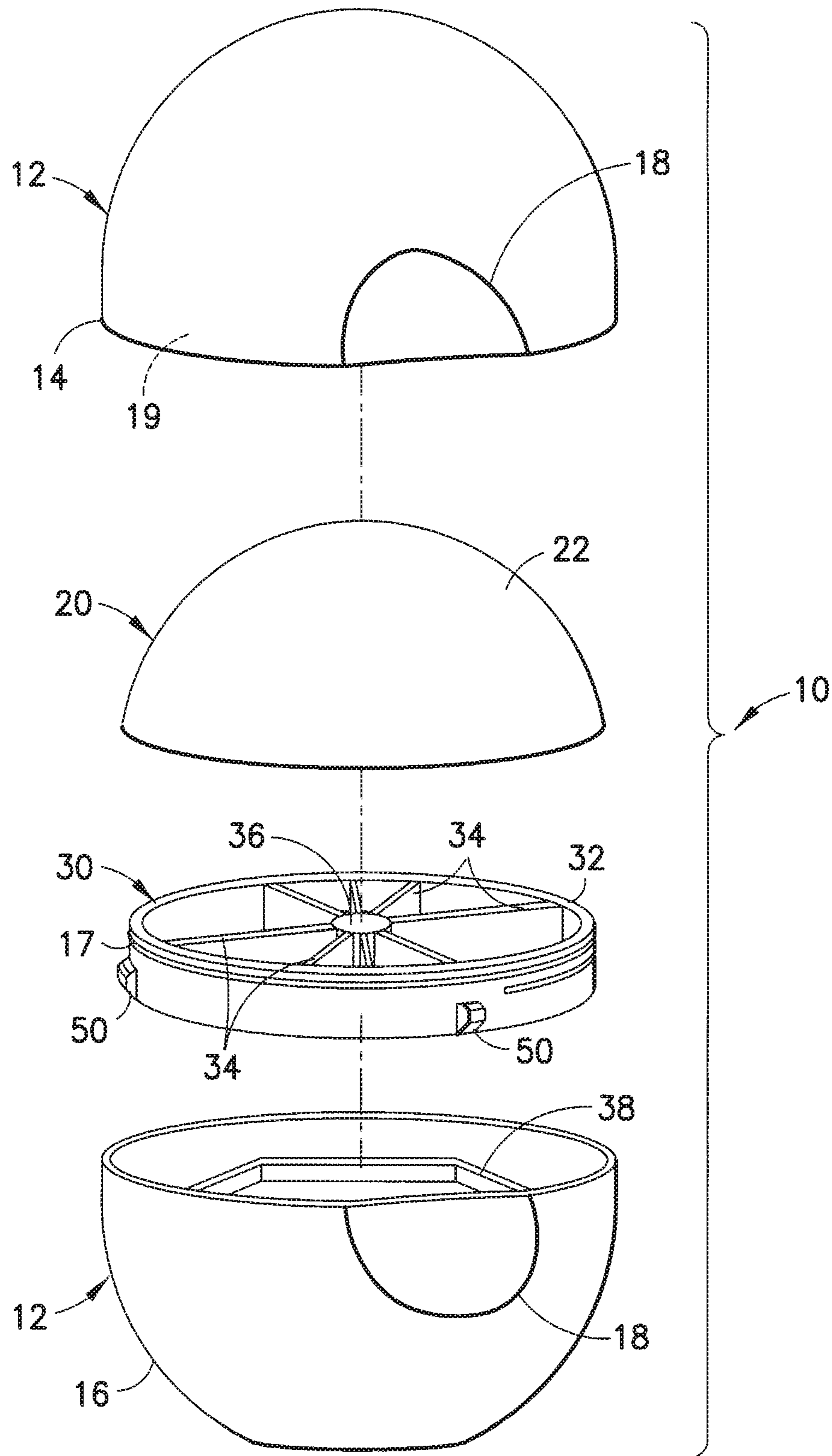


FIG.2

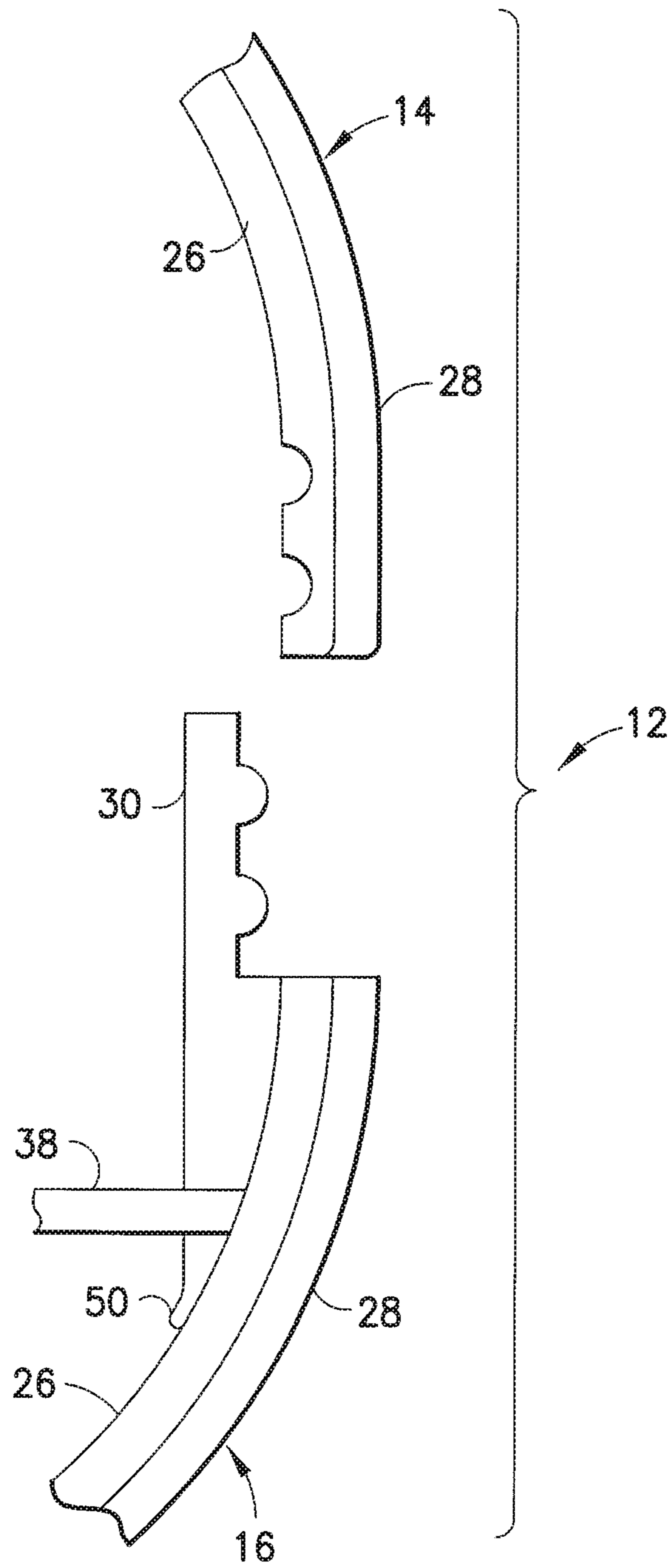


FIG. 3

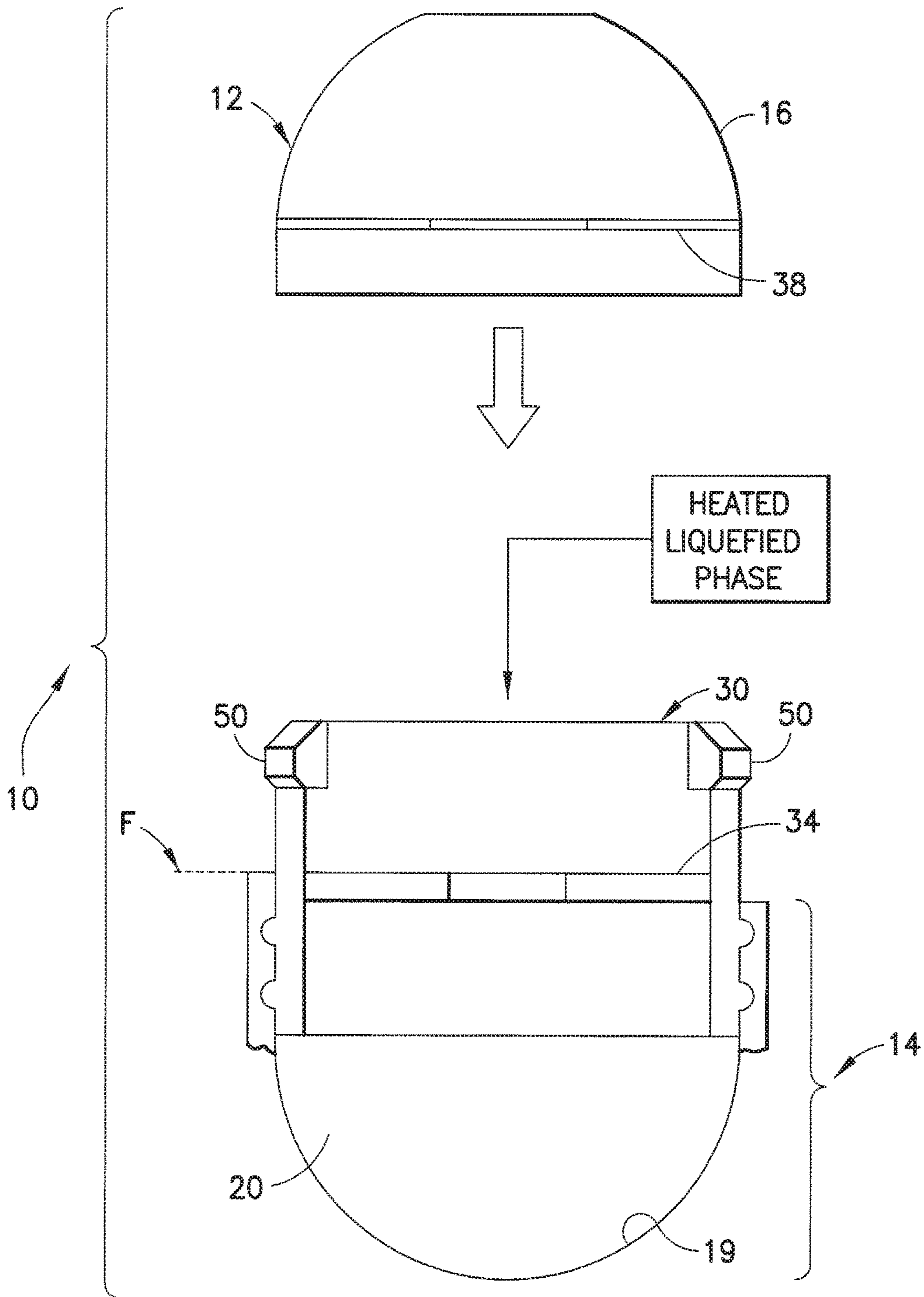


FIG. 4



## LIP BALM WITH SPHERICAL SURFACE AND METHOD FOR PRODUCING

The present application is a continuation of U.S. application Ser. No. 13/941,204, filed Jul. 12, 2013; which is a continuation of U.S. application Ser. No. 13/891,268, filed May 10, 2013 (now abandoned); which is a continuation of U.S. application Ser. No. 12/632,114, filed Dec. 7, 2009 (now U.S. Pat. No. 8,444,337); all of which are incorporated by reference herein.

### TECHNICAL FIELD

The present invention relates to lip balms and, more particularly, a lip balm having a spherical surface and manufactured using a hot pour process.

### BACKGROUND

Skin on and around the lips can often become chapped or otherwise damaged due to overexposure from elements such as sun and/or wind, particularly during athletic activities in which a person's face remains exposed to these elements for extended periods of time. The same skin can also become chapped or damaged while carrying out everyday non-athletic activities. For example, working outside in extreme cold, dry heat, or sun can also cause damage to the skin on the lips. Even working indoors or sleeping in dry conditions can cause the lips to chap, thereby leading to the development of cracks, which are often painful and can become infected.

Lip balms are often applied to prevent chapped lips. When applied prior to exposure to sun, wind, dry heat, or other extreme conditions, the lip balm can provide suitable protection to the skin on and around the lips. Even when applied after the skin on the lips is chapped, the lip balm can prevent any further damage from occurring. In either case, by providing a protective layer of lip balm, the risk of an infection developing in the damaged skin is minimized.

Lip balms are currently sold as emulsions, liquids, gels, or solids. In emulsion or liquid form, the lip balms are generally packed in containers such as jars. Gels (and liquids on occasion) are typically dispensed from squeeze tubes. Solid lip balms are generally packaged in stick form and dispensable from tubes or from lipstick-type applicators.

Solid lip balms are commonly manufactured using either a hot pour process or a bullet process. In the hot pour process, the lip balm ingredients are combined and heated in a liquefied phase. The liquid is then directly poured into the final consumer package, where it is cooled and solidifies. In the bullet process, the lip balm ingredients are also combined and heated in a liquefied phase. However, in the bullet process, the liquefied balm is poured into molds where it is cooled and solidified. The balm may then be cut into the desired shape and inserted into the consumer package.

The choice of the method used for a particular product depends on the design/functionality of the package, the additives in the balm, and the desired characteristics of the lip balm (color, feel, shape, and the like).

### SUMMARY

In one aspect, the present invention resides in a lip balm applicator product that is substantially spherical in shape. The applicator product comprises upper and lower portions that are connectable together to define the substantially spherical shape of the applicator product. A support platform

is located in the lower portion and accommodates a quantity of lip balm having an arcuate surface that can be exposed upon separation of the upper portion from the lower portion.

In another aspect, the present invention resides in a lip balm product comprising a composition of waxes and oils in solid form and formed to have an arcuate surface. The wax and oil composition can be eroded upon being drawn across a surface such as a user's lips. The composition is formed to have the arcuate surface using a hot pour process.

In another aspect, the present invention resides in a method of manufacturing a lip balm. In such a method, a receptacle having a concave arcuate surface is provided. A lip balm material in a heated, liquefied phase is also provided and poured into the receptacle. Once poured, the heated, liquefied phase is allowed to solidify such that a surface of the solidified lip balm material has an arcuate configuration that corresponds to the concave arcuate surface of the receptacle.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a lip balm applicator, of the present invention.

FIG. 2 is a perspective exploded view of the lip balm applicator of FIG. 1.

FIG. 3 is a schematic view of a portion of a receptacle of the lip balm applicator of FIG. 1.

FIG. 4 is a schematic representation of a hot pour process of manufacturing a lip balm having an arcuate surface.

### DETAILED DESCRIPTION

As is shown in FIG. 1, a lip balm applicator product having a lip balm composition is designated generally by the reference number 10 and is hereinafter referred to as "applicator 10." Applicator 10 comprises a receptacle 12 having the lip balm composition located therein. The receptacle 12 is substantially spherical in shape. The present invention is not limited in this regard, as the receptacle 12 may be substantially cylindrical with rounded surfaces, egg-shaped, ovate, or the like. The receptacle 12 comprises an upper portion 14 and a lower portion 16, the portions being separable from each other along a line L that extends substantially circumferentially about the receptacle perpendicular to a major axis M extending longitudinally through the receptacle. An interior surface 19 of the upper portion 14 of the receptacle 12 is defined by a concave surface having a spherical or arcuate topography. Although various surfaces described herein are referred to as being spherical, it should be understood that the term "spherical" includes arcuate surfaces.

The upper portion 14 and the lower portion 16 are connectable together via any suitable means such as the interengagement of threads. The present invention is not limited in this regard, as other mechanisms may be used to connect the upper portion 14 and the lower portion 16 together (e.g., engaging surfaces that fit together frictionally). The lip balm composition is located in the lower portion 16 and is hereinafter referred to as "lip balm 20."

The outer surface of the receptacle 12 includes a depression 18 formed partly on the upper portion 14 and partly on the lower portion 16. The depression 18 is a divot formed in the receptacle 12 that accommodates the thumb of a user to facilitate the opening and closing of the receptacle by alternately separating and connecting the upper portion 14 and the lower portion 16.

Upon separation of the upper portion **14** from the lower portion **16**, the lip balm **20** is revealed. The lip balm **20** is mounted in the lower portion **16** on a support platform and is defined by a quantity of suitable lip balm material formed or otherwise configured to have a spherical shape that includes a spherical surface **22**. The spherical shape and spherical surface **22** allows the lip balm material to extend above the upper edge of the lower portion **16**, thereby facilitating the uninhibited application of the lip balm to a user's lips. The present invention is not limited to the lip balm **20** being configured to have a spherical shape and spherical surface **22**, however, as other configurations are within the scope of the present invention.

Referring now to FIG. **2**, the support platform on which the lip balm **20** is mounted is designated generally by the reference number **30**. The support platform **30** is a wheel having an outer rim **32** and threads **17** located thereon. A plurality of prongs **50** is located along a lower edge of the outer rim **32** (the edge opposite the threads **17**) to facilitate the connection of the support platform **30** to connecting structure such as ridges **38** in the lower portion **16**. In the assembly of the receptacle **10**, the prongs **50** allow the support platform **30** to be snappingly received on lower portion **16**.

The support platform **30** includes a plurality of spokes **34** that extend from the outer rim **32** and that terminate at a hub **36**. Both the widths of the spokes **34** and the diameter of the hub **36** are selected to provide a suitable area on which the lip balm **20** can be supported. The spokes **34** extend from the hub **36** at equal angles and connect with an inner surface of the outer rim **32**. The present invention is not limited to the use of spokes and hubs, as the area bounded by the outer rim **32** can be solid. Although the outer rim **32** is described as being substantially circular, a portion along the edge of the outer rim is flattened to allow for the accommodation of the depression **18**.

Referring now to FIG. **3**, both the upper portion **14** and the lower portion **16** of the receptacle **12** comprise a thermoplastic elastomer (TPE) injection molded over a plastic form comprising acrylonitrile-butadiene-styrene (ABS) copolymer. Accordingly, the defining surfaces of both the upper portion **14** and the lower portion **16** comprise a bottom layer **26** of ABS copolymer covered by a top layer **28** of TPE. The present invention is not limited to the bottom layer **26** being ABS copolymer, however, as the bottom layer in one or both of the upper portion **14** and the lower portion **16** can be polyethylene (PE). In such an alternate configuration, the tactile sensation to the user is slightly different upon handling the receptacle **12**. In any configuration, the material of the top layer **28** provides a desirable tactile sensation to the user of the applicator **10**, namely, by providing a soft surface that can be easily gripped, thereby facilitating the easy opening and closing of the receptacle **12**.

The lip balm **20** comprises a quantity of suitable lip balm material. One exemplary lip balm material is a composition that is at least in part a blend of beeswax, coconut oil, olive oil, and jojoba oil that can be eroded when drawn over a surface (e.g., lips). The present invention is not limited to the lip balm material being a blend of such wax and oils, however, as other materials (e.g., petrolatum and petrolatum-based compounds) are within the scope of this disclosure. The blend of beeswax, coconut oil, olive oil, and jojoba oil can also include various ingredients including, but not limited to, emollients, ultraviolet protective agents, moisturizers, vitamins, aloe vera, colorants, fragrances, and the like. Drawing the material over a surface such as the lips causes the material to transfer to the surface as a film.

The spherical outer surface **22** of the lip balm **20** defines a mound-shaped quantity of the lip balm material. The spherical or mound shape provides desirable tactile sensations and use benefits as compared to stick (tubular) forms of the lip balm material. Desirable tactile sensations result from the spherical shape having a larger exposed surface area (as compared to the stick forms of the lip balm material) and the tactile sensation of a curved surface against the lips. Use benefits include the ability to apply the lip balm material to both lips simultaneously.

Referring now to FIG. **4**, the lip balm **20** is manufactured from the lip balm material using a hot pour process. In using the hot pour process, the lip balm ingredients are combined and heated in a liquefied phase and poured into the final consumer packaging, which in this case is the receptacle **12**. In preparation for the hot pour process, the support platform **30** is assembled with the upper portion **14** and inverted such that the support platform is level and vertical with regard to the upper portion. Orienting the assembled upper portion **14** and support platform **30** in this manner allows for the heated and liquefied phase to be poured into the upper portion and retained therein. The interior surface **19** of the upper portion **14** may be coated with a release agent prior to pouring the heated and liquefied phase, which thereby allows for efficient and clean removal of the upper portion by the user when using the finished product.

After the heated and liquefied phase is poured into the upper portion **14** and filled to a level **F** to cover at least a portion of the spokes **34**, the liquefied phase is cooled or allowed to cool. The spokes **34** provide surfaces onto which the solidified lip balm material can adhere. The present invention is not limited to the solidification of the lip balm material around spokes, however, as the support platform can include any suitable configuration of surfaces around which the lip balm material can solidify. Upon sufficient solidification of the lip balm material, the lower portion **16** is inserted onto the assembled and filled upper portion **14** and support platform **30**.

The use of the hot pour method in manufacturing the lip balm **20** defined by the spherical surface **22** provides cost benefits over similar methods that use the bullet method. In particular, using the hot pour method obviates the need for an intermediate step in which hot liquid is poured into separate molds, thereby also eliminating the need for additional equipment (molds). Furthermore, the additional steps of removing solidified product from molds and processing and handling the solidified product are avoided.

Although this invention has been shown and described with respect to the detailed embodiments thereof, it will be understood by those of skill in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Therefore, it is intended that the invention not be limited to the particular embodiments disclosed in the above detailed description, but that the invention will include all embodiments falling within the scope of this disclosure.

We claim:

1. A method of manufacturing a lip balm applicator comprising:
  - pouring liquefied phase lip balm into an upper portion of a lip balm enclosure, the lip balm enclosure comprising:
    - the upper portion releasably attachable to a sub-assembly, the sub-assembly comprising:

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- a lower portion having an interior surface and an exterior surface, and  
 a support structure connected to the interior surface of the lower portion, the support structure comprising a plurality of surfaces extending radially inward from the interior surface of the lower portion; and  
 solidifying the lip balm such that the lip balm is attached to and mounted on the support structure, the lip balm extending into the upper portion when the upper portion is attached to the sub-assembly;  
 wherein the upper portion is releasably attached to the sub-assembly with interlocking threads.
2. The method of claim 1, wherein an exterior shape of the solidified lip balm substantially matches a shape of an interior surface of the upper portion.
3. The method of claim 1, wherein the upper portion comprises an inner layer and an outer layer.
4. The method of claim 3, wherein at least one of the inner layer or the outer layer comprises a thermoplastic elastomer.
5. The method of claim 3, wherein the outer layer is softer than the inner layer.
6. The method of claim 3, wherein the inner layer comprises a releasing agent.
7. The method of claim 1, wherein the support structure is substantially circular.
8. The method of claim 1, wherein the lip balm applicator is symmetrical about a major axis of the lip balm enclosure.
9. The method of claim 1, wherein the solidified lip balm comprises an arcuate surface.
10. The method of claim 1, wherein the solidified lip balm comprises a spherical surface.
11. The method of claim 1, wherein the solidified lip balm has an exterior shape that complements the upper portion of the lip balm enclosure.
12. The method of claim 1, wherein the lip balm comprises petrolatum.
13. The method of claim 1, wherein the lip balm comprises at least one moisturizer.
14. The method of claim 1, wherein the lip balm comprises at least one ultraviolet protective agent.
15. A method of manufacturing a lip balm applicator comprising:  
 pouring liquefied phase lip balm into an upper portion of a lip balm enclosure, the lip balm enclosure comprising:  
 the upper portion releasably attachable to a sub-assembly, the sub-assembly comprising:  
 a lower portion having an interior surface and an exterior surface, and  
 a support structure connected to the interior surface of the lower portion, the support structure comprising at least one surface extending inward from the interior surface of the lower portion; and  
 solidifying the lip balm such that the lip balm is attached to and mounted on the support structure, the lip balm extending into the upper portion when the upper portion is attached to the sub-assembly;  
 wherein the upper portion is releasably attached to the sub-assembly with interlocking threads.
16. The method of claim 15, wherein an exterior shape of the solidified lip balm substantially matches a shape of an interior surface of the upper portion.
17. The method of claim 15, wherein the upper portion comprises an inner layer and an outer layer.

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18. The method of claim 17, wherein at least one of the inner layer or the outer layer comprises a thermoplastic elastomer.
19. The method of claim 17, wherein the outer layer is softer than the inner layer.
20. The method of claim 17, wherein the inner layer comprises a releasing agent.
21. The method of claim 15, wherein the support structure is substantially circular.
22. The method of claim 15, wherein the lip balm applicator is symmetrical about a major axis of the lip balm enclosure.
23. The method of claim 15, wherein the solidified lip balm comprises an arcuate surface.
24. The method of claim 15, wherein the solidified lip balm comprises a spherical surface.
25. The method of claim 15, wherein the solidified lip balm has an exterior shape that complements the upper portion of the lip balm enclosure.
26. The method of claim 15, wherein the lip balm comprises petrolatum.
27. The method of claim 15, wherein the lip balm comprises at least one moisturizer.
28. The method of claim 15, wherein the lip balm comprises at least one ultraviolet protective agent.
29. A method of making a lip balm applicator comprising:  
 selecting packaging for the lip balm applicator, wherein the packaging comprises a mold portion having threads on an interior surface, and a lower portion having threads on an exterior surface and a lip balm support structure connected to an interior surface of the lower portion;  
 orienting at least the mold portion of the packaging to receive and retain a heated liquefied phase lip balm;  
 pouring the heated liquefied phase lip balm through the lip balm support structure into the mold portion; and  
 solidifying the lip balm such that the lip balm is attached to and mounted on the support structure, the lip balm extending into the mold portion when the mold portion is attached to the lower portion;  
 wherein when the packaging is assembled, the lip balm is revealed by disengaging the threads located on the interior surface of the mold portion from the threads located on the exterior surface of the lower portion.
30. The method of claim 29, wherein an exterior shape of the solidified lip balm substantially matches a shape of the interior surface of the mold portion.
31. The method of claim 29, wherein the mold portion comprises an inner layer and an outer layer.
32. The method of claim 31, wherein at least one of the inner layer or the outer layer comprises a thermoplastic elastomer.
33. The method of claim 31, wherein the outer layer is softer than the inner layer.
34. The method of claim 31, wherein the inner layer comprises a releasing agent.
35. The method of claim 29, wherein the support structure is substantially circular.
36. The method of claim 29, wherein the lip balm applicator is symmetrical about a major axis of the lip balm applicator.
37. The method of claim 29, wherein the solidified lip balm comprises an arcuate surface.
38. The method of claim 29, wherein the solidified lip balm comprises a spherical surface.

39. The method of claim 29, wherein the solidified lip balm has an exterior shape that complements the mold portion of the packaging.

40. The method of claim 29, wherein the lip balm comprises petrolatum. 5

41. The method of claim 29, wherein the lip balm comprises at least one moisturizer.

42. The method of claim 29, wherein the lip balm comprises at least one ultraviolet protective agent.

43. The method of claim 29, wherein the support structure 10 comprises at least one surface extending inward relative to an interior surface of the lower portion.

44. The method of claim 29, wherein the support structure comprises a plurality of surfaces extending radially inward relative to the interior surface of the lower portion. 15

\* \* \* \* \*

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 9,585,458 B2  
APPLICATION NO. : 15/016257  
DATED : March 7, 2017  
INVENTOR(S) : Jonathan Teller et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page

Page 3, Item (56) References Cited, Other Publications:

Column 2, Line 29: change "purpous" to -- purpose --; and

Column 2, Line 42: change "budget-eos-lip-b- alm-review.html,Oct. 1, 2009." to  
-- budget-eos-lip-balm-review.html, Oct. 1, 2009. --.

Page 4, Item (56) References Cited, Other Publications:

Line 27: change "sponge-power-puffround-rectangle-puff-beauty-makeup-tool-p-" to  
-- sponge-power-puff-round-rectangle-puff-beauty-makeup-tool-p- --; and

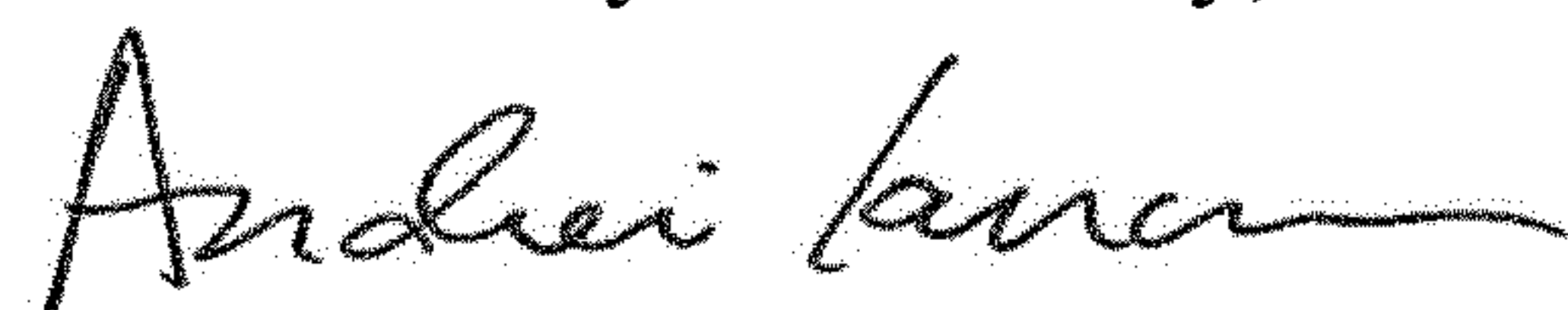
Line 32: change "beauty-cute-shapesponge-make-foundation-makeuprandom-color-" to  
-- beauty-cute-shape-sponge-make-foundation-makeuprandom-color- --.

In the Claims

Column 6, Claims 26, 27, and 28:

Lines 20, 22, and 24: delete "of claim" (first occurrence).

Signed and Sealed this  
Twelfth Day of February, 2019



Andrei Iancu  
*Director of the United States Patent and Trademark Office*